REMARKS

Claims 1 to 11 were pending in this application, claims 4 to 9 and 11 were cancelled above, and claims 1 to 3 and 10 were amended. New claims 13 to 22 were added. Support for the amendments and new claims can be found in the specification at page 18, lines 3 to 6. Claims 1 to 3, 10, and 13 to 22 are pending and under consideration.

On pages two and three of the March 1, 2004 Office Action, the Examiner stated that additional nucleotide/amino acid sequences in the text of the disclosure must be conformed to the sequence listing rules. Applicants have conformed the sequences to the sequence listing rules above. Applicants have amended the specification on pages 19, 20, 26, 27, 31, and 32, and added computer readable sequence listings for sequence id numbers 10 to 15.

A paper sequence listing and a computer readable form of the sequence listing are submitted herewith. The undersigned hereby verifies that the content of the paper sequence listing submitted herewith and the computer readable form submitted herewith are the same and that no new matter has been added.

On page three of the Office Action, the Examiner objected to FIG. 1 because the reference character "mtsA" was used to designate both "mtsB" and "mtsC". FIG. 1 has been amended and a replacement sheet is enclosed. Accordingly, Applicants respectfully request that the Examiner withdraw the objection to the drawings.

On pages three and four of the March 1, 2004 Office Action, the Examiner rejected claims 1 to 3, 10, and 11 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter Applicants regard as the invention. Applicants respectfully traverse this rejection of the claims.

The Examiner stated that claims 1 and 2 are vague and indefinite because part (c) of those claims read on fragments of variants. Part (c) of claims 1 and 2 has been amended to delete reference to the fragments of (b), i.e., the claims no longer refer to fragments of variants.

The Examiner stated that claims 1 and 2 are indefinite because it is unclear what is encompassed by the term "variant" and that the use of the term "immunogenic fragment" is preferable. The term "variant" in part (b) of claims 1 and 2 has been deleted and replaced with the term "amino acid sequence". These amino acid sequences are clearly defined as those which have at least 95% identify to SEQ ID NO: 2 and which either specifically bind an antibody which binds specifically to a MtsA polypeptide having the amino acid sequence of SEQ ID NO: 2 (claim 1) or generate an immune response to a Streptococcus (claim 2). The term "fragment" in part (c) of claims 1 and 2 has been replaced with the term "immunogenic fragment."

Regarding the rejection raised in the final paragraph of paragraph 4 of the Office Action, Applicants submit that parts (b) and (c) of claims 1 and 2 do not define the invention in terms of a result to be achieved. Rather, the structural and technical features for achieving this result are present in the claims. The structural features of the amino acid sequences covered by the claims are clearly set out in parts (b) and (c) of claims 1 and 2. The amino acid sequences defined in part (b) must have at least 95% identity to SEQ ID NO: 2. The fragments defined in part (c) must be fragments of at least 60 contiguous amino acids of SEQ ID NO: 2.

The technical features of the sequences are also clearly set out in the claims. In claim 1, parts (b) and (c), the amino acid sequences must specifically bind to an antibody which binds specifically to a MtsA polypeptide having the amino acid sequence of SEQ ID NO: 2. This MtsA polypeptide is clearly defined in terms of

its structural features. In claim 2, parts (b) and (c), the amino acid sequences must generate an immune response against a Streptococcus. Thus, only those amino acid sequences that have the above-mentioned function are covered by the claims. The skilled person would be able to identify peptides having the specified structural and technical characteristics without undue burden, and the metes and bounds of the claims are clear. Thus, claims 1 and 2 comply with 35 U.S.C. § 112, second paragraph.

Finally, since part (c) of claims 1 and 2 has now been amended to refer to fragments of SEQ ID NO: 2 of at least 60 contiguous amino acids, Applicants submit that claims 1 and 2 are not vague or indefinite. Accordingly, Applicants respectfully request that the Examiner withdraw the rejection of the claims under 35 U.S.C. § 112, second paragraph.

On pages four to seven of the Office Action, the Examiner rejected claim 1 under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to make and use the invention. Applicants respectfully traverse this rejection of claim 1.

The Examiner stated that certain aspects of the claims are enabled and that certain aspects are not. Applicants have amended claim 1 to be consistent with the Examiner's opinion regarding enablement. Specifically, the term "variant" in claim 1 has been replaced with the term "amino acid sequence". Part (c) of claim 1 has been amended to delete reference to fragments of variants. The claim has also been amended to specify in part (c) that the fragments are immunogenic fragments of at least 60 contiguous amino acids in length and are fragments of SEQ ID NO: 2. The Examiner acknowledged in section 6 of the Office Action that the specification enabled the polypeptides that are now claimed. Accordingly,

Applicants respectfully request that the Examiner withdraw the rejection of claim 1 under 35 U.S.C. § 112, first paragraph.

On pages seven to nine of the Office Action, the Examiner rejected claims 2, 3, 10, and 11 under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to make and use the invention. Applicants respectfully traverse this rejection of the claims.

The portions of claim 2 relating to the structures of the polypeptides have been amended in the same manner as claim 1. The enablement issues regarding the structure of the polypeptides are therefore submitted to be overcome for the reasons set out above.

The Examiner stated that the specification does not provide any examples which demonstrate that the protein can generate an immunoprotective response and that while the specification has shown that the protein is immunogenic and can induce antibodies in mice, it does not demonstrate that these antibodies can protect against Streptococcus. Therefore, the Examiner contends that the vaccine claims are not enabled.

Applicants have amended the claims to recite: (i) a composition which invokes an immune response to Streptococcus comprising a pharmaceutically acceptable carrier and an immunogenically effective amount of a polypeptide, and (ii) a method of invoking an immune response in a host to Streptococcus. These claims are enabled because the specification demonstrates that antibodies in sheep and rats were raised. Accordingly, Applicants respectfully request that the Examiner withdraw the rejection of the claims under 35 U.S.C. §112, first paragraph.

In view of the above amendments and remarks, Applicants respectfully request that the Examiner withdraw the rejections of the claims.

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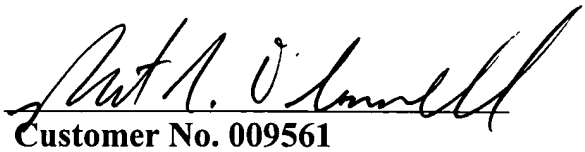
Respectfully submitted,

Date: June 28, 2004

By 

Customer No. 009561
Patrick J. O'Connell, Esq. (33,984)
POPOVICH, WILES &
O'CONNELL, P.A.
650 Third Avenue South, Suite 600
Minneapolis, MN 55402
Telephone: (612) 334-8989
Attorney for Applicants